Royal Oak
COMMUNITY
DEVELOPMENT

2014 Proposed Pavement Management Program And Millage Plan of Action

City of Royal Oak officials have decided to place a 2.5 mil - 10 Year Road Millage on the city's November 2014 ballot. A 2.5 mil increase will raise approximately $5,000,000 per year over a period of 10 years for improvements to Royal Oak roadways.

Background: In 2013 the City contracted for an independent Pavement Management study which was performed by OHM Engineers. The study rated roads using the widely accepted method of PASER scale ratings. PASER scale ratings grade each road segment on a scale of 1 to 10, where a rating of 10 corresponds to a brand new/refurbished road and a rating of 1 is a road in the worst condition. The overall average rating for city streets is currently 4.8 out of 10 and is expected to decrease over the next 10 years to a rating of 3.6 according to the study. The road study uses software that models and predicts roads deterioration, and is used to develop cost effective strategies for restoration and improving the condition and rating of the street network. The software was utilized to apply various types of repairs with known costs to arrive at a total amount of capital improvements necessary to stabilize and improve road conditions. An overall target PASER rating of 6 was determined to be the desired goal for the city road network. To reach this goal, an additional $5,000,000 per year will be required to improve city streets.

Current Road Funding: Royal Oak's current road funding comes from Act 51 money collected by the State of Michigan from vehicle registration fees and tax on gasoline and diesel fuel. Royal Oak's low tax rate has never allowed any property tax revenue or any other general revenue to be spent on local or major streets. Public Act 51 monies can only be spent on road maintenance and improvements. The State of Michigan requires annual certification of road expenditures to ensure that Act 51 funds are not used for any other purpose. Act 51 requires derailed reporting and tracks contributions to road funding through local sources such as millages, bond sales and other funding sources.

The current Act 51 distribution to Royal Oak for roads is approximately $3 million per year. Over half of this funding goes to road maintenance including snowplowing, pothole patching and other services. The remainder of the funding, roughly $1,500,000, goes to capital improvements. Act 51 dictates that recipients dedicate the majority of the funding to major roadways with a maximum amount of just over $300,000 which can be spent on local roads. Unfortunately, $300,000 per year is not enough funding to make significant improvements to Royal Oak local roads, and the city cannot keep up with amount of deteriorated roadways year after year.

As a means of providing transparency for the use of road dollars, MDOT requires Act 51 expenditures and other community road dollars to be tracked on MDOT's Act 51 website, which is available for public review. If a millage is approved, Royal Oak's road expenditures will be reported on the Act 51 reporting website and available for public review.

History: In the mid-1980's the city approved a $21,000,000 bond issue for local roads, which was the last time most local neighborhood streets saw any significant repairs or upgrades. At that time the city only repaired the worst streets. Many streets that were in fair to good condition

at that time had no repairs done as part of the program, and consequently, these streets are now in poor condition.

If a millage is approved, the proposed program will include the following activities:

A. Rehabilitation:

- Concrete, asphalt, or composite streets in very poor condition that exhibit structural failures requiring complete removal and replacement will be repaved with new concrete pavement.

- Concrete streets with discrete, localized areas in poor condition that require removal and replacement which will be repaired with new concrete pavement. This includes the adjacent concrete curbing within a target area. Concrete patching can significantly extend the life of the pavement in excess of 20 years. Cost estimates were based on the percentage of roadway that requires patching, determined during a 2014 survey of each road.

- Asphalt and composite streets (consisting of asphalt over a concrete base) that have poor surface conditions, depending on the rating and level of distress, will be resurfaced by milling off a sufficient depth of old asphalt and placement of 2 to 3 ½ inches of new asphalt. These streets will be joint sealed within 1-2 years following paving, and will be reviewed for additional joint sealing and/or maintenance five years after paving. These streets are assumed to have sufficient support from the existing stone or other base materials. Some asphalt and composite streets will require removal and replacement of deteriorated base areas, as well as curb and gutter replacement to restore the road edge and improve drainage.

B. Maintenance Activities

- Asphalt and composite streets in relatively good condition will receive crack and joint sealing to extend the service life.

Unimproved streets (i.e. gravel, chip seal, seal coat, etc.) will not be paved as part of this program. Unimproved street paving for the first time is performed by special assessment to the adjacent property owners per city commission policy adopted in 1958. **It is still the city's desire to eliminate the unimproved streets and in order to achieve this goal, the engineering department recommends that the city adopts a policy to cover one-half (50%) percent of the full frontage rate of any special assessment approved during the millage period. This policy was used successfully as part of the 1980's road improvement program which paved numerous unimproved streets.**

Construction Methods: The city utilizes materials and methods for road construction and repairs that are regularly reviewed and updated for the best and most cost effective measures. The city currently uses material specifications that have been tested and vetted by the Michigan Department of Transportation (MDOT), which devotes considerable resources to achieve high quality long lasting roads. High quality materials will be tested at the source (concrete or asphalt

plant) as well as on the job site at the time of placement to ensure strict material requirements are met. Contractors are selected through a competitive bid process in accordance with city charter.

Preliminary Construction Schedule: The city has outlined a preliminary plan of improvements provided a millage is approved. Many factors were reviewed and decisions regarding the existing road condition and necessary type of repair, as well as the coordination with other known utility work were considered. Pavement management programs typically follow the theory where the best roads are addressed first in order to maintain and sustain roads in moderate to good condition. It takes less money to sustain roads in moderate condition than full scale replacement. While this is widely accepted as the most conservative and cost affective means of managing a road system, the city makes the following recommendations for a proposed improvement schedule based on the overall parameters of the whole road system:

- Complete removal and replacement. The city proposes to make improvements to streets that have little to no service life remaining and require reconstruction during every year of the program. The total amount of reconstruction will be divided up into a 10-year construction program focusing on the worst streets first. The streets to receive full reconstructions are highlighted in red on the proposed annual construction maps. This is slightly counter intuitive to pavement management theory; however it addresses the situation that some of the worst streets can no longer be temporarily patched to extend their life and total replacement is necessary at the present time.

- Asphalt resurfacing: The city proposes to make improvements to asphalt and composite streets throughout the city that that require asphalt resurfacing during every year of the program. By programming work in targeted areas, the city hopes to limit the contractor's mobilization and movements to reduce cost and schedule impacts, which ultimately allows for more paving work to be performed each year. Asphalt that is properly maintained can have a service life that rivals concrete. The city will be divided into five major areas. In order to address the vast amount of asphalt resurfacing needed, and not favor any one area over another, the city will only make one half of any area asphalt resurfacings in any one year focusing on the better condition roads first. The remaining half of the work, which is on roads with lower condition ratings and have decreasing service life, will occur five years after the initial half is completed. The city feels that a significant cost savings will be achieved by following pavement management protocols of addressing the better roads first in this instance. A larger number of asphalt and composite roads will be addressed at the outset preserving and extending the service life of the pavement. Additionally, the city proposes to use new asphalt pavement coatings that have been shown to add an additional 5 to 10 years onto the lifespan of asphalt pavements.

- Localized concrete patching: The city proposes to make improvements to streets throughout the city that that require concrete patching reconstruction during every year of the program. By programming work in targeted areas, the city hopes to limit the contractor's mobilization and movements to reduce cost and schedule impacts, which ultimately allows for more paving work to be performed each year. The city will be divided into five major areas. In order to address the vast amount of concrete repairs and not favor any one area over another, the city will only make one half of concrete repairs in a specific area in any one year focusing on the worst areas first. The remaining half of the needed work, which is on roads in better condition and have

additional service life will occur five years after the initial half is completed. Concrete is inherently a more durable material and concrete streets typically have longer service lives when properly maintained. The city believes that there is little cost savings to be achieved by following pavement management protocols of addressing the better roads first in this instance.

- Joint Sealing Maintenance: The city proposes to perform maintenance on streets that only require joint sealing to increase their service life within the first five years of the program. This will increase the lifespan of asphalt and composite streets that are currently in good condition.

The proposed target area maps and street segment listings are attached. This targeted approach is intended to not favor any area by placing them first in the lineup of improvements. Each neighborhood will see improvement activities alternating between concrete street repairs and asphalt repairs every two to three years until the program is completed. It also allows targeted types of improvement to take place without having conflicts between numerous contractors. The schedule also distributes the construction management and oversight into manageable individual projects.

Staffing: A project of this magnitude cannot be handled by the current city staff. The city will be relying on contracted consultants to design, prepare contract documents and manage and inspect the daily aspects of the work. Engineering is currently at the limit of its capabilities for staff oversight and quality control of contractor and consultant work on existing projects that have previously been programmed in the city's capital improvement program. Engineering staffing would need to increase to 4 total full time engineers, 5 total full-time in house inspectors, 3 total clerks (2 full time and 2 part time).

Questions regarding this plan should be directed to the City of Royal Oak Engineering Department at 248-246-3260.